



COMPRESSED GAS ASSOCIATION, INC.

# SAFETY BULLETIN

**SB-20—2006**

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## GENERAL INFORMATION ON QUICK-CONNECTING COUPLINGS FOR COMPRESSED GAS SERVICE

### Introduction

There are inherent differences between quick-connecting couplings and traditional wrench-tightened, threaded connections. Quick-connecting couplings (also known as quick disconnects) are designed to connect or disconnect compressed gas lines without the use of tools. Because these connections are made and broken frequently, maintenance of quick-connecting couplings is more critical than maintenance of traditional threaded connections.

Quick-connecting couplings are commonly used in compressed air systems where leaks do not usually create a hazard to personnel. Quick-connecting couplings are also used with compressed oxygen and fuel gases where even small leaks can create a hazard to personnel.

### Safety requirements

When using quick-connecting couplings, oxidation potential, flammability, and asphyxiation hazards shall be addressed by following these safety measures:

- Compressed gas dispensing systems should have no leaks. Systems shall be checked for leaks before each use and rechecked for leaks each time couplings are disconnected and reconnected. *Do not use a system that leaks;*
- Quick-connecting couplings should be uniquely designed for a specific type of gas and application to eliminate the possibility of hazardous misconnections;
- Both segments of a quick-connecting coupling shall be obtained from the same manufacturer to ensure the integrity of the connection;
- Users of quick-connecting couplings should follow the manufacturer's instructions;
- Quick-connecting couplings shall not be used for gases that are toxic or corrosive;
- Quick-connecting couplings are engineered to close tolerances. Surfaces should not be altered or repaired in an attempt to make them fit; and
- Quick-connecting couplings shall be rated for the maximum pressure to which they can be exposed.

**WARNING:** *Failure to meet these safety requirements may result in explosion, fire, severe personal injury, or death.*

### Maintenance/replacement requirements

Quick-connecting couplings are designed to be gas-tight when they are new. However they contain elastomeric seals, which are subject to leakage caused by foreign material and deterioration and cracking due to age. Therefore, they require more frequent maintenance than wrench-tightened connections. Quick-connecting couplings should be visually inspected for damage, dirt, or debris before each use.

Some couplings are designed to be maintained and repaired; a proper program of checking and seal replacement ensures continued safe use. Other couplings cannot be repaired and shall be replaced to ensure safe system operation. Refer to the manufacturer's instructions before attempting to repair quick connect couplings.

## Use on cylinders

A cylinder should never be stored or transported without closing the cylinder valve, even if it is equipped with a quick-connecting coupling incorporating an internal shutoff mechanism.

## Other considerations

Users of quick-connecting hose couplings should be aware that these devices can be constructed with two-way shutoff features, one-way shutoff features, or no shutoff features.

The following should be considered when using quick-connecting couplings:

- Will the personnel using these devices connect or disconnect them under pressure? If so, will this interfere with recommended operating procedures of startup, pressurization, purging of hose lines, shutdown, and depressurization of equipment?;
- Can the reverse installation of a one-way shutoff coupling connecting two hoses result in unrestricted flow of pressurized gas if disconnected under pressure?;
- Can a coupling be accidentally uncoupled when dragging a hose?;
- Will the device create restriction to gas flow?; and
- Can a successful program of maintenance and/or testing and replacement required for safe operation be accomplished?

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